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10/561,862	12/20/2005	Hiroyuki Anzai	UNIU90.001APC	5508

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EXAMINER

WINKLER, MELISSA A

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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06/13/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/561,862	Applicant(s) ANZAI ET AL.	
	Examiner MELISSA WINKLER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 - 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,786,400 to Brock et al. in view of US 6,313,060 to Sugiyama et al. and US 5,895,793 to Kitamura et al.

Regarding Claim 1. Brock et al. teach a polyol composition used to prepare a rigid polyurethane foam containing atleast one polyol compound, a blowing agent, a catalyst, and a polyisocyanate (Column 2, Lines 10 - 21).

Brock et al. do not expressly teach the polyol composition contains a foam stabilizer. However, Sugiyama et al. also teach a polyol composition used to prepare a polyurethane foam in which a foam stabilizer is present (Column 11, Lines 8 – 12). Brock et al. and Sugiyama et al. are analogous art as they are from the same field of endeavor, namely polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to add a foam stabilizer to the polyol

composition taught by Brock et al. The motivation would have been that a foam stabilizer can be used to extend the lifetime of a foam.

While Brock et al. do teach fluoroalkanes may be used as blowing agents in the foam (Column 4, Lines 11 - 15), Brock et al. do not specifically teach the use of 1,1,1,3,3-pentafluoropropane as the blowing agent. However, Kitamura et al. teach a blowing agent composition useful in forming polyurethane foams comprising 1,1,1,3,3-pentafluoropropane and a stabilizer, such as N,N-dimethylacetamide (Column 2, Lines 7 - 53). Brock et al. and Kitamura et al. are analogous art as they are from the same field of endeavor, namely compositions for making polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the pentafluoropropane and stabilizer taught by Kitamura et al. as the blowing agent composition for preparing the polyurethane foam taught by Brock et al. The motivation would have been that when 1,1,1,3,3-pentafluoropropane is selected as the blowing agent, the resultant polyurethane foams have fire performance, compressive strength, and dimensional stability comparable or superior to foams blown with chlorofluorocarbon or hydrochlorofluorocarbon blowing agents. Furthermore, the use of a stabilizer prevents 1,1,1,3,3-pentafluoropropane from deactivating the catalyst when forming a polyurethane foam or causing yellowing in the final foam product

(Kitamura et al.: Column 1, Lines 27 - 31 and 53 - 60; Column 1, Line 66 - Column 2, Line 6).

Regarding Claim 3. Brock et al. teach the composition of Claim 3 wherein the polyol employed may be prepared as a tertiary amino group-containing polyol compound, an aliphatic polyol, or an aromatic polyol (Column 3, Line 5 – Column 4, Line 7).

Regarding Claim 4. Brock et al. teach the polyol composition of Claim 3 wherein the polyol may be prepared from the reaction of an alkylene oxide with a starting material such as ammonia (Column 3, Lines 5 - 36).

Regarding Claim 5. Brock et al. teach the composition of Claim 3 wherein the aliphatic polyol may be prepared by the reaction of an alkylene oxide with a starting material such as butanediol-1,4 (Column 3, Lines 5 - 40).

Regarding Claim 6. Brock et al. teach the composition of Claim 3 wherein the polyol compound may include a polyester polyol compound (Column 2, Lines 14 – 15). In one embodiment, the polyester polyol is an aromatic polyol prepared from a polycarboxylic acid and a polyvalent alcohol (Column 3, Lines 50 - 53). The polycarboxylic acid may be an aromatic polycarboxylic acid such as phthalic acid, isophthalic acid, or terephthalic acid (Column 3, Lines 55 – 62). The polyvalent alcohol may be a polyhydric alcohol such as diethylene glycol (Column 3, Lines 63 - 64).

Brock et al. do indicate the polyol component may be a combination of polyols (Column 2, Lines 14 - 15) though an aromatic polyol obtained from an alkylene oxide and aromatic polyfunctional active hydrogen compound is not expressly disclosed. However, Sugiyama et al. also teach a polyether polyol produced by addition of an alkylene oxide to a polyhydroxy compound (Column 8, Lines 12 – 20). Sugiyama et al. specifically cite bisphenol A, a polyfunctional active hydrogen compound with an aromatic ring, as a suitable polyhydroxy compound for reaction with the alkylene oxide (Column 8, Lines 26 – 35). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the aromatic polyol taught by Sugiyama et al. in conjunction with the aromatic polyol taught by Brock et al. The motivation would have been that the polyether polyol taught by Sugiyama et al. has been found to minimize problems, such as a decrease in hardness and deterioration of compression set, associated with polyurethane foams prepared from other, conventional polyols (Sugiyama et al., Column 9, Lines 35 - 42).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,786,400 to Brock et al. in view of US 6,313,060 to Sugiyama et al. and US 5,895,793 to Kitamura et al.

Regarding Claim 2. Brock et al. teach a method of producing a hard polyurethane foam in which an isocyanate, such as polymethylenepolyphenyl polyisocyanate (polymeric MDI), is blended with a polyol mixture. Following the mixing step, the composition is foamed and cured to obtain a rigid polyurethane foam (Column 6, Lines 48 – 52).

The polyol composition taught by Brock et al. contains at least one polyol compound, a blowing agent, a catalyst, and a polyisocyanate (Column 2, Lines 10 - 21).

Brock et al. do not expressly teach the polyol composition contains a foam stabilizer. However, Sugiyama et al. also teach a polyol composition used to prepare a polyurethane foam in which a foam stabilizer is present (Column 11, Lines 8 – 12). At the time of invention, it would have been obvious to a person of ordinary skill in the art to add a foam stabilizer to the polyol composition taught by Brock et al. The motivation would have been that a foam stabilizer can be used to extend the lifetime of a foam.

While Brock et al. do teach fluoroalkanes may be used as blowing agents in the foam (Column 4, Lines 11 - 15), Brock et al. do not specifically teach the use of 1,1,1,3,3-pentafluoropropane as the blowing agent. However, Kitamura et al. teach a blowing agent composition useful in forming polyurethane foams comprising 1,1,1,3,3-pentafluoropropane and a stabilizer, such as N,N-dimethylacetamide (Column 2, Lines 7 – 53). At the time of invention, it would have been obvious to a person of ordinary

skill in the art to use the pentafluoropropane and stabilizer taught by Kitamura et al. as the blowing agent composition for preparing the polyurethane foam taught by Brock et al. The motivation would have been that when 1,1,1,3,3-pentafluoropropane is selected as the blowing agent, the resultant polyurethane foams have fire performance, compressive strength, and dimensional stability comparable or superior to foams blown with chlorofluorocarbon or hydrochlorofluorocarbon blowing agents. Furthermore, the use of a stabilizer prevents 1,1,1,3,3-pentafluoropropane from deactivating the catalyst when forming a polyurethane foam or causing yellowing in the final foam product (Kitamura et al.: Column 1, Lines 27 - 31 and 53 - 60; Column 1, Line 66 - Column 2, Line 6).

Claims 7 – 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,786,400 to Brock et al. in view of US 6,313,060 to Sugiyama et al. and US 5,895,793 to Kitamura et al.

Regarding Claim 7. Brock et al. teach a polyol composition used to prepare a rigid polyurethane foam containing atleast one polyol compound, a blowing agent, and a catalyst (Column 2, Lines 10 - 21).

Brock et al. do not expressly teach the polyol composition contains a foam stabilizer. However, Sugiyama et al. also teach a polyol composition used to prepare a

polyurethane foam in which a foam stabilizer is present (Column 11, Lines 8 – 12). At the time of invention, it would have been obvious to a person of ordinary skill in the art to add a foam stabilizer to the polyol composition taught by Brock et al. The motivation would have been that a foam stabilizer can be used to extend the lifetime of a foam.

While Brock et al. do teach fluoroalkanes may be used as blowing agents in the foam (Column 4, Lines 11 - 15), Brock et al. do not specifically teach the use of 1,1,1,3,3-pentafluoropropane as the blowing agent. However, Kitamura et al. teach a blowing agent composition useful in forming polyurethane foams comprising 1,1,1,3,3-pentafluoropropane and a stabilizer, such as N,N-dimethylacetamide (Column 2, Lines 7 – 53). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the pentafluoropropane and stabilizer taught by Kitamura et al. as the blowing agent composition for preparing the polyurethane foam taught by Brock et al. The motivation would have been that when 1,1,1,3,3-pentafluoropropane is selected as the blowing agent, the resultant polyurethane foams have fire performance, compressive strength, and dimensional stability comparable or superior to foams blown with chlorofluorocarbon or hydrochlorofluorocarbon blowing agents. Furthermore, the use of a stabilizer prevents 1,1,1,3,3-pentafluoropropane from deactivating the catalyst when forming a polyurethane foam or causing yellowing in the final foam product

(Kitamura et al.: Column 1, Lines 27 - 31 and 53 - 60; Column 1, Line 66 - Column 2, Line 6).

Regarding Claim 8. Brock et al. teach the composition of Claim 7 contains a polyisocyanate (Column 2, Lines 10 - 21).

Regarding Claim 9. Brock et al. teach the composition of Claim 7 wherein the polyol employed may be prepared as a tertiary amino group-containing polyol compound, an aliphatic polyol, or an aromatic polyol (Column 3, Line 5 – Column 4, Line 7).

Regarding Claim 10. Brock et al. teach the polyol composition of Claim 9 wherein the polyol may be prepared from the reaction of an alkylene oxide with a starting material such as ammonia (Column 3, Lines 5 - 36).

Regarding Claim 11. Brock et al. teach the composition of Claim 9 wherein the aliphatic polyol may be prepared by the reaction of an alkylene oxide with a starting material such as butanediol-1,4 (Column 3, Lines 5 - 40).

Regarding Claim 12. Brock et al. teach the polyol composition of Claim 9 but do not expressly teach an aromatic polyol obtained from an alkylene oxide and aromatic polyfunctional active hydrogen compound. However, Sugiyama et al. also teach a polyether polyol produced by addition of an alkylene oxide to a polyhydroxy compound (Column 8, Lines 12 – 20). Sugiyama et al. specifically cite bisphenol A, a

polyfunctional active hydrogen compound with an aromatic ring, as a suitable polyhydroxy compound for reaction with the alkylene oxide (Column 8, Lines 26 – 35). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the aromatic polyol taught by Sugiyama et al. in conjunction with the aromatic polyol taught by Brock et al. The motivation would have been that the polyether polyol taught by Sugiyama et al. has been found to minimize problems, such as decrease in hardness and deterioration of compression set, associated with polyurethane foams prepared from other polyols (Sugiyama et al., Column 9, Lines 35 - 42).

Regarding Claim 13. Brock et al. teach a method of producing a hard polyurethane foam in which an isocyanate, such as polymethylenepolyphenyl polyisocyanate (polymeric MDI), is blended with the polyol mixture of Claim 7. Following the mixing step, the composition is foamed and cured to obtain a rigid polyurethane foam (Column 6, Lines 48 – 52).

Regarding Claim 15. Brock et al. teach the method of Claim 13 wherein the isocyanate and polyol mixture are blended at a temperature of 20°C (Column 6, Lines 48 – 53).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,786,400 to Brock et al. in view of US 6,313,060 to Sugiyama et al. and U US 5,895,793 to Kitamura et al., as applied to Claims 7 and 13 above, and further in view of US 5,164,419 to Bartlett et al.

Regarding Claim 14. Brock et al. teach the method of Claim 13 but are silent regarding the NCO:OH ratio. However, Bartlett et al. also teach a method making a rigid polyurethane foam in which the isocyanate index/NCO:OH ratio is preferably in the range of about 1.0 to about 4.0 (Column 5, Lines 9 – 14). Brock et al. and Bartlett et al. are analogous art as they are from the same field of endeavor, namely rigid polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to react the polyol and isocyanate components taught by Brock et al. at the isocyanate index taught by Bartlett et al. The motivation would have been that the isocyanate index taught by Bartlett et al. provides advantages such as stiffness and minimal shrinkage in the final foam product.

Response to Arguments

Applicant's arguments filed February 15, 2008 have been fully considered but they are not persuasive. The applicants argue that no references of record teach or disclose the specific weight ratio of HFC-245a to HFC-365mfc. However, the claims set

forth "a compatibilizer selected from the group consisting of N,N-dimethylacetamide,...and also HFC-245fa/HFC-365 \geq 60/40..." As such, the specific weight ratio of HFC-245a to HFC-365mfc is not necessarily a required attribute of the claimed blowing agent composition.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MW
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/James J. Seidleck/
Supervisory Patent Examiner, Art Unit 1796